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TECHNICAL FIELD

[Industrial Application]this invention -- leakproof [hygienic goods, such as a disposable diaper, sweat pants for babies, an incontinence pad, and a sanitary napkin, and for these hygienic goods] -- business -- it is related with a sheet. [Detailed Description of the Invention]

DESCRIPTION OF THE PRIOR ART

[Description of the Prior Art]leakproof [to which hygienic goods, such as a disposable diaper, become the outermost layer (backseat) from a resin film conventionally] -- business -- although the sheet is unified, this layer is rough **, and in order that the touch may be bad and may improve this inconvenience, piling up a nonwoven fabric outside further is also performed. However, in such a structure, since the nonwoven fabric has separated with the film, it is not desirable on a design. When manufacturing such a product, in order to manufacture hygienic goods, supplying a nonwoven fabric and a film separately continuously, since independent intensity is required, respectively, a nonwoven fabric and a film have the inconvenience that the weight of such materials moves against the weight saving of increase and a product.
[0003]Although the backseat of hygienic goods is used [the thing of the white plain] from on feeling of purity, in order that a high grade feeling and design effects may be given, printing a pattern on a film or the nonwoven fabric surface is also performed. Since the textures of a film remain as it is, it is far from a high grade feeling, and may not necessarily be satisfied with what printed the pattern on the film of what was printed on the nonwoven fabric surface in respect of the clearness of printing, etc.

[Industrial Application]this invention -- leakproof [hygienic goods, such as a disposable diaper, sweat pants for babies, an incontinence pad, and a sanitary napkin and for these hygienic goods] -- business -- it is related with a sheet.
[0002]
[Description of the Prior Art]leakproof [to which hygienic goods, such as a disposable diaper, become the outermost layer (backseat) from a resin film conventionally] -- business -- although the sheet is unified, this layer is rough **, and in order that the touch may be bad and may improve this inconvenience, piling up a nonwoven fabric outside further is also performed. However, in such a structure, since the nonwoven fabric has separated with the film, it is not desirable on a design. When manufacturing such a product, in order to manufacture hygienic goods, supplying a nonwoven fabric and a film separately continuously, since independent intensity is required, respectively, a nonwoven fabric and a film have the inconvenience that the weight of such materials moves against the weight saving of increase and a product.
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printed the pattern on the film of what was printed on the nonwoven fabric surface in respect of the clearness of printing, etc.

[0004]

[Problem(s) to be Solved by the Invention]this invention is flexible, and the touch is good and excellent in design -- leakproof [lightweight] -- business -- hygienic goods, such as a disposable diaper which has a sheet and the above-mentioned feature using it, -- it is going to provide -- it is a thing.

[0005]

[Means for Solving the Problem]A nonwoven fabric which consists of a thermoplastic fiber with a fiber diameter of 10 micrometers or less, and a colored thermoplastic resin film are laminated, and this invention is bonded by thermo-compression in the shape of a pattern, leakproof, wherein a coloring pattern is carrying out the phanerosis to a nonwoven fabric face -- business -- it is a sheet -- this invention -- this leakproof one -- business -- they are hygienic goods using a sheet for a nonwoven fabric face having carried out outside.

[0006]leakproof [of this invention] -- business -- thermoplastics which constitutes a nonwoven fabric and a film which are used for a sheet, If both are laminated and it may bond by thermo-compression, polyester, polyamide, polyolefine, a polyvinyl chloride in particular, etc. will not be limited, but it excels in respect of that what consists of polyolefin system resin is good as for a heat adhesive property, there being no generating of harmful gas at the time of incineration abandonment, etc.

[0007]A thermoplastic film needs to be colored a different color from a nonwoven fabric. It becomes difficult to be color-free or to give a unique pattern at a thermocompression bonding part in the case of the same film of a color as a nonwoven fabric. There is no restriction in particular about an amorous glance of a film, and it is not restricted in particular about concentration, either. Since an amorous glance of an internal absorption layer may be transparent and it may be visible from a coloring pattern portion, if highly transparent colorant is used although transparency of colorant, such as a color, may be high or the opacity of paints etc. may be high, In order to lose such inconvenience depending on a use, it is preferred to use opaque high colorant. Coloring of a film can be obtained by carrying out melt molding of the resin which mixed colorant as carried out conventionally. Since it will become easy to produce problems, such as producing a pinhole by thermo compression bonding with a nonwoven fabric, if pliability will fall and aesthetic property of hygienic goods obtained will become hard, if thickness becomes thick, and it becomes thin although thickness of a film does not have restriction in particular, either, As a rule of thumb, it is preferred that it is the range of about 10-50 micrometers. A thermoplastic film may be a fine porous moisture permeability waterproof film besides a nature film of nonporous.

[0008]As for a nonwoven fabric laminated on a film, 10 micrometers or less of fiber diameters consist of a thermoplastic fiber of 5 micrometers or less preferably. A fiber diameter is important in order to acquire the opacity of a nonwoven fabric. For example, textiles whose fiber diameter is 3 micrometers have textiles of the same weight 100 times the length of 30 micrometers, and since it is 10 times the project area (area of a shadow) of this, when a nonwoven fabric of the same eyes is used, concealment area by textiles becomes large. And since a fiber surface product will be 10 times by 1/10 in a curvature radius of a fiber surface, scattered reflection happens in a fiber surface and a masking effect becomes high more than a actual concealment area. leakproof [which is obtained by an effect that aesthetic property of a nonwoven fabric becomes flexible having that a fiber diameter is small] -- business -- aesthetic property of a sheet or hygienic

goods will become flexible.
[0009]A nonwoven fabric used by this invention needs to consist of thermoplastic fibers, when textiles are not thermoplasticity and it bonds by thermo-compression with a film, a compression bonding part will not become transparent enough, but a coloring pattern will become ambiguous. If the transparency of a nonwoven fabric is high, a difference of the transparency of a thermocompression bonding part and a non-compression bonding part will become small, and a coloring pattern will become indistinct similarly.
[0010]Although a nonwoven fabric which consists of the above thermoplastic fibers can be manufactured with a meltblown method, the span bond method, a dry method that used assembled-die textiles, etc., as an effective method, a meltblown method is especially mentioned by this invention. Its composition fiber diameter is thin, since a nonwoven fabric obtained with a meltblown method is deposited at random and becomes high-density, a thing of small eyes of concealment nature is also high, and its thermo-compression-bonding nature with a film is also good. When polyolefin system resin is used especially, manufacture of a nonwoven fabric is easy and it is cheap, and since it has a water resisting property (waterproofness) and water repellence, it is desirable. As for a nonwoven fabric, it is preferred to carry out gestalt stabilization by embossing etc. in the range which does not spoil opacity beforehand. Even if especially eyes of a nonwoven fabric will make a fiber diameter small if eyes become small although not limited, concealment nature falls easily, if a uniform nonwoven fabric's being hard to be obtained and eyes become large -- leakproof -- business -- since a sheet's becoming thick too much and being inferior to compactability and aesthetic property become hard easily, it is preferred that it is a range about 15 - 50 g/m^2.
[0011]As the lamination-compression-bonding method of a thermoplastic film and a nonwoven fabric, How to pile up a film and a nonwoven fabric which were prepared separately, respectively, and bond by thermo-compression in the shape of a pattern with an ultrasonic wave, a heat embossing calendar, etc., It is good by any methods, such as a method of sticking by pressure with the cooling roll etc. which extrude and laminate a film from a T die etc. and have an irregular pattern on a nonwoven fabric, and the method of forming a nonwoven fabric directly and bonding by thermo-compression with a meltblown method etc., on a film, further. It is changing into the state of a nonwoven fabric film-state-izing an important thing substantially in a sticking-by-pressure portion by this invention, and having transparency. When a nonwoven fabric carries out the rarefaction, in the portion, a color of a coloured film on the back is transparent, and is in sight, and a clear coloring pattern is acquired. It also has an effect of improving endurance, such as the abrasion resistance etc. of a nonwoven fabric which consists of comparatively small textiles of textiles intensity like a melt-blown nonwoven fabric, by forming a nonwoven fabric into half-film state in a sticking-by-pressure portion.
[0012]If needed, a coloured film is a different color, it may color or a print pattern may be given to a nonwoven fabric. When a pattern is given to a nonwoven fabric, peculiar design effects are acquired from an amorous glance of a coloring section of a coloring pattern portion obtained when a nonwoven fabric forms half-film state by thermo compression bonding, and a nonwoven fabric, or a difference in textures.
[0013]hygienic goods of this invention are a disposable diaper, sweat pants, an incontinence pad, a sanitary napkin, etc. -- leakproof [of these hygienic goods] -- business -- as a sheet (backseat) -- leakproof [of this invention] -- business -- a sheet is used so that a nonwoven fabric face may serve as the outside. Structure of hygienic goods is a structure generally known, and encloses a water absorption layer, a hydrophilic fiber layer, etc. which consist of pulp, a water-absorbing

resin, textiles, etc. between facing material and a sheet for prevention leakage of water.
[0014]
[Example]The white nonwoven fabric a which consists of a polypropylene fiber with a mean fiber diameter of 3 micrometers manufactured by the meltblown method as a nonwoven fabric. The white nonwoven fabric b which consists of polyester fiber with a mean fiber diameter of 7 micrometers manufactured with the dry method. The white nonwoven fabric c which consists of a polypropylene fiber with a mean fiber diameter of 18 micrometers manufactured with the dry method. The white nonwoven fabric d which consists of a rayon fiber with a mean fiber diameter of 18 micrometers manufactured with the dry method (in all, eyes are 20 g/m^2 above). And five sorts of the white nonwoven fabric e (eyes 60 g/m^2) which consists of a polypropylene fiber with a mean fiber diameter of 18 micrometers manufactured with the dry method are prepared, laminating with the 15-micro-thick polypropylene film colored blue, respectively, and bonding by thermo-compression with the heat embossing calendering roll of a texture pattern -- leakproof -- business -- the sheets A-E were obtained.
[0015]leakproof [each] -- business -- the disposable diaper was manufactured for the sheet, using the nonwoven fabric side as the outside. the obtained disposable diaper -- leakproof -- business -- each thing which uses sheet A-C had flexible aesthetic property, it was excellent in a feeling of wear, and it came also out of endurance enough. leakproof -- business -- although what uses the sheet D was flexible, its adhesion of a nonwoven fabric and a film was not enough, and it produced peeling in part during wear. leakproof -- business -- since what uses the sheet E has the large eyes of a nonwoven fabric, it is thick and lacks in pliability.
[0016]the appearance of a disposable diaper -- leakproof -- business -- what uses the sheet A, B, and E had the good concealment nature by a nonwoven fabric, except the compression bonding part, the color of the film was transparent and was hardly in sight, but by the compression bonding part, the blue of the film was transparent, it was visible, and the coloring pattern with a clear outline was observed. on the other hand, leakproof -- business -- although the blue of the film was transparent and it was visible in the compression bonding part in what uses the sheet C, on the whole, the blue of the film was thinly transparent also except the compression bonding part, it was visible and only the blurred coloring pattern was acquired. leakproof -- business -- the blue of a film is not much transparent and not visible, since textiles have not film-ized a compression bonding part, either, although the blue of a film is thinly transparent on the whole and it is visible in what uses the sheet D -- as a whole -- Usu -- only the coloring pattern very ambiguous only by it looking blue was acquired.
[0017]

EFFECT OF THE INVENTION

[Effect of the Invention]leakproof [of this invention] -- business -- since an outside surface consists of a super-thin fiber nonwoven fabric, the hygienic goods which use a sheet do not have a feeling of rough ** of a product, are flexible and excellent in a feeling of wear. and leakproof [of this invention] -- business -- a sheet, since the nonwoven fabric and the film are unifying by the thermocompression bonding part, Both do not exfoliate and it has sufficient endurance, and even if eyes are small, it has only the intensity which can be supplied to the manufacturing process of hygienic goods, and the weight saving of hygienic-goods products and slimming can be attained. Since it has a clear coloring pattern according to the shape of the thermocompression bonding part, in printing to the nonwoven fabric surface, the designing effect which is not

acquired is acquired and it can be considered as the high product of added value.

DESCRIPTION OF PRIOR ART

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MEANS FOR SOLVING THE PROBLEM

[Means for Solving the Problem]A nonwoven fabric which consists of a thermoplastic fiber with a fiber diameter of 10 micrometers or less, and a colored thermoplastic resin film are laminated, and this invention is bonded by thermo-compression in the shape of a pattern, leakproof, wherein a coloring pattern is carrying out the phanerosis to a nonwoven fabric face -- business -- it is a sheet -- this invention -- this leakproof one -- business -- they are hygienic goods using a sheet for a nonwoven fabric face having carried out outside.
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EXAMPLE

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CLAIMS

[Claim 1]leakproof, wherein a nonwoven fabric which consists of a thermoplastic fiber with a fiber diameter of 10 micrometers or less, and a colored thermoplastic resin film are laminated, it is bonded by thermo-compression in the shape of a pattern and a coloring pattern is carrying out the phanerosis to a nonwoven fabric face -- business -- a sheet.
[Claim 2]leakproof [according to claim 1] -- business -- hygienic goods using a sheet for a nonwoven fabric face having carried out outside.